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Water Quality Standards Criteria Summaries A Compilation of State/Federal Criteria

EP1.29/2:

PESTICIDES

Water Quality Standards
Criteria Summaries
A Compilation of State/Federal Criteria

October 1980

U. S. Environmental Protection Agency
Office of Water Regulations and Standards
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NATIONAL SUMMARY

OF

STATE WATER QUALITY STANDARDS

PESTICIDES

OCTOBER, 1980

PREPARED FOR

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

CRITERIA AND STANDARDS DIVISION

401 M STREET, S. W.

WASHINGTON, D. C. 20460

PREPARED BY

NALESNIK ASSOCIATES INCORPORATED

505 ELEVENTH STREET, S. E.

WASHINGTON, D. C. 20003

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INTRODUCTION

This digest is compiled to provide general information to the public as well as to Federal, State, and local officials. It contains excerpts from the individual Federal-State water quality standards establishing pollutant specific criteria for interstate surface waters. The water quality standards program is implemented by the U. S. Environmental Protection Agency where responsibility for providing water quality recommendations, approving State-adopted standards for interstate waters, evaluating adherence to the standards, and overseeing enforcement of standards compliance, has been mandated by Congress.

Standards, a nationwide strategy for surface water quality management, contain three major elements: the use (recreation, drinking water, fish and wildlife propagation, industrial, or agricultural) to be made of the navigable water; criteria to protect these uses; and an antidegradation statement to protect existing high quality waters, from degradation by the addition of pollutants.

Water quality criteria (numerical or narrative specifications) for physical, chemical, temperature, and biological constituents are stated in the July 1976 U. S. Environmental Protection Agency publication Quality Criteria for Water (QCW), available from the Government Printing Office, Washington, D. C. The 1976 QCW, commonly referred to as the "Red Book," is the most current compilation of scientific information used by the Agency as a basis for assessing water quality. This publication is subject to periodic updating and revisions in light of new scientific and technical information.

This digest summarizes fifteen pesticides which are usually incorporated into State Water Quality Standards and for which EPA has recommended criteria in the 1976 Quality Criteria for Water. These pesticides are: Aldrin/dieldrin, chlordane, chlorophenoxy herbicides, DDT, demeton, endosulfan, endrin, guthion, heptachlor, lindane, malathion, methoxychlor, mirex, parathion, and toxaphene. All of these chemicals are man-made for the control of insects, fungus and other plant and animal diseases or disease vectors. The presence of any of these substances in national waters are a result of an intrusion from non-point sources associated with agricultural or forestry application and point source production facility effluents. To control the presence of aldrin/dieldrin, DDT (DDD and DDE), endrin and toxaphene in water, EPA promulgated effluent standards for manufacturers of these pesticides (40 CFR 129).

All of these substances exert detrimental effects on aquatic and animal life; some are suspected mutagens or carcinogens. For these reasons EPA recommended the following ambient water quality criteria for each compound:

aldrin/dieldrin	0.003 ug/l for freshwater and marine aquatic life. The persistence, bioaccumulation potential, and carcinogenicity of aldrin/dieldrin caution human exposure to a minimum.

chlordane	0.01 ug/l for freshwater aquatic life 0.004 ug/l for marine aquatic life. The persistence, bioaccumulation potential, and carcinogenicity of chlordane caution human exposure to a minimum.
chlorophenoxy herbicides	2,4-D 100 ug/l for domestic water supply (health). 2,4,5-TP 10 ug/l for domestic water supply (health).
DDT	0.001 ug/l for freshwater and marine aquatic life. The persistence, bioaccummulation potential, and carcinogenicity of DDT caution human exposure to a minimum.
demeton	0.1 ug/l for freshwater and marine aquatic life.
endosulfan	0.003 ug/l for freshwater aquatic life 0.001 ug/l for marine aquatic life.
endrin	0.2 ug/l for domestic water supply (health). 0.004 ug/l for freshwater and marine aquatic life.
guthion	0.01 ug/l for freshwater and marine aquatic life.
heptachlor	0.001 ug/l for freshwater and marine aquatic life. The persistence, bioaccumulation potential and carcinogenicity of heptachlor caution human exposure to a minimum.
lindane	4.0 ug/l for domestic water supply (health). 0.01 ug/l for freshwater aquatic life. 0.004 ug/l for marine aquatic life.
malathion	0.1 ug/l for freshwater and marine aquatic life.
methoxychlor	100 ug/l for domestic water supply (health). 0.03 ug/l for freshwater and marine aquatic life.
mirex	0.001 ug/l for freshwater and marine aquatic life.
parathion	0.04 ug/l for freshwater and marine aquatic life.
toxaphene	5 ug/l for domestic water supply (health). 0.005 ug/l for freshwater and marine aquatic life.

Since water quality standards experience revisions and upgrading from time to time, following procedures set forth in the Clean Water Act, individual entries in this digest may be superseded. As these revisions are accomplished and allowing for the States to revise their standards accordingly, this digest will be updated and reissued. Because this publication is not intended for use other than as a general information resource, to obtain the latest information and for special purposes and applications, the reader needs to refer to the current approved water quality standards. These can be obtained from the State water pollution control agencies or the EPA or Regional Offices.

Individual State-adopted criteria follow:

REFERENCES

A California Water Quality Standards by River Basins, c.a. 1975

For more detailed information on selected basins, sub-basins and stretches of streams and coastal areas refer to California State Water Quality Standards.

B Delaware Water Quality Standards, March 25, 1979

C Idaho Water Quality Standards, c.a. September, 1979

D Missouri Water Quality Standards, c.a. February, 1978

E American Samoa Water Quality Standards, Revised July, 1973

F Territory of Guam Water Quality Standards, Sept. 1975

G Trust Territory of the Pacific Islands Water Quality Standards, October 21, 1973

H Virgin Islands Water Quality Standards, Aug. 1973

ENVIRONMENT REPORTER, The Bureau of National Affairs, Inc. Washington, D. C. 20037

1 Pages 701:0501-0509, February 16, 1979

2 Pages 706:1004-1008, July 20, 1979

3 Pages 711:0542-0544, August 5, 1977

4 Pages 716:0603, March 26, 1976

5 Pages 726:1005, 1011-1013, March 7, 1980

Basic Water Quality Standards adopted May 22, 1979, have not yet been submitted to EPA for formal approval.

6 Pages 731:1002-1009, September 8, 1978

7 Pages 746:1008-1014, October 19, 1979

8 Pages 751:0504-0505, January 25, 1980

9 Pages 765:0512-0515, January 30, 1976

10 Page 761:0503-0504, 1973

11 Page 766:0504-0509, October 5, 1979

12 Pages 771:0502-0504, September 29, 1978

13 Pages 776:0504-0506, April 10, 1979

14 Pages 781:0501-0502, May 18, 1979

15 Pages 786:0501-0502, August 29, 1975

16 Page 791:0583, May 26, 1978

17 Pages 796:0103-0108, February 16, 1979

18 Pages 801:1001-1002, Sept. 29, 1978

19 Page 806:1003, March 30, 1979

20 Page 811:1043, 1974

21 Pages 816:0602-0607, 0642-0648, 1974

22 Pages 821:0502-0505, June 30, 1978

23 Pages 831:0501-0510, February 21, 1975

24 Page 836:0502, June 30, 1978

25 Pages 841:0507-0537, December 7, 1979

26 Pages 846:0501-0508, November 17, 1978

27 Pages 851:1001-1023, December 15, 1978

28 Pages 856:1001-1002, July 18, 1978

29 Pages 861:1002-1007, August 11, 1979

30 Pages 866:1004-1009, December 28, 1979

31 Pages 871:0501-0506, November 25, 1977

32 Pages 876:1001-1043, May 26, 1978

33 Pages 881:1001-1007, September 21, 1979

34 Pages 886:0513-0524, August 29, 1975

35 Pages 891:1001-1129, November 16, 1979

36 Pages 901:0501-0505, November 3, 1978

37 Pages 906:0501-0506, October 13, 1978

38 Pages 911:0501-0507, June 22, 1979

39 Pages 916:0541-0544, April 14, 1978

40 Pages 921:1001-1003, August 13, 1976

41 Pages 926:0541-0563, January 26, 1979

42 Pages 931:0501-0508, May 26, 1978

43 Pages 936:1001-1003, June 27, 1975

44 Pages 941:1001-1005, May 26, 1978

45 Pages 946:0501-0520, July 14, 1978

46 Pages 951:1002-1003, April 28, 1978

47 Pages 956:1001-1007, January 11, 1980

48 Page 741:1002, November 23, 1979

49 Pages 896:0301-0310, March 31, 1978

PESTICIDES

State	Criteria values in mg/l	Designated Stream Use
Alabama[1.]	Not Specified	All
	Toxic Substances narrative: only such amounts, whether alone or in combination with other substances as will not render the waters unsafe or unsuitable as a source of water supply for drinking or food-processing purposes, or injurious to fish, wildlife and aquatic life.	Public water supply
	Toxic Substances narrative: only such amounts, whether alone or in combination with other substances or wastes, as will not: render the water unsafe or unsuitable for swimming and water-contact sports; be injurious to fish, wildlife and aquatic life or, where applicable, shrimp and crabs; impair the waters for any other usage established for this classification.	Swimming and other whole body water-contact sports
	Toxic substances narrative: Only such amounts, whether alone or in combination with other substances, as will not: be injurious to fish and aquatic life, including shrimp and crabs; exceed one-tenth of the 96-hour median tolerance limit for fish, aquatic life or shellfish, including shrimp and crabs.	Shellfish harvesting
	Toxic Substances narrative: Only such amounts, whether alone or in combination with other substances, as will not: be injurious to fish and aquatic life including shrimp and crabs in estuarine or salt waters or the propagation thereof; not to exceed one-tenth of the 96-hour median tolerance limit for fish and aquatic life including shrimp and crabs in salt and estuarine waters except that other limiting concentrations may be used when factually justified and approved by the Commission.	Fish and wildlife

State	Criteria values in mg/l	Designated Stream Use
Alabama (con't)	Only such amounts as will not render the waters unsuitable for agricultural irrigation, livestock watering, industrial cooling, industrial process water supply purposes, and fish survival, nor interfere with downstream uses.	Agricultural and industrial water supply
	Only such amounts as will not render the waters unsuitable for industrial cooling and industrial process water supply purposes, nor interfere with downstream water uses.	Industrial operations
	Only such amounts as will not render the waters unsuitable for agricultural irrigation, livestock watering, industrial cooling, and industrial process water supply purposes, where applicable nor interfere with downstream water use.	Navigation
Alaska[2.]	Not specified	All
	Toxic substances narrative: shall not exceed Alaska Drinking Water Standards or EPA Quality Criteria for Water.	I. Fresh water (A) water supply (i) drinking, culinary and food processing
	Toxic substances narrative: same as I. (A) (i) where contact with a product destined for subsequent human consumption is present. Same as I. (C) or FWPCA Water Quality Criteria as applicable to substances for stockwaters. Concentrations for irrigation waters shall not exceed FWPCA Water Quality Criteria or WQC 1972.	(ii) agriculture, including irrigation and stock watering
	Toxic substances narrative: shall not individually or in combination exceed 0.01 times the lowest measured 96-hour LC_{50} for life stages of species identified by the department as being the most sensivtive, biologically important to the situation or exceed criteria cited in EPA Quality Criteria for Water or Alaska Drinking Water Standards whichever concentration is less.	(iii) aquaculture

State	Criteria values in mg/l	Designated Stream Use
Alaska (con't)	Toxic substances narrative: substances shall not be present which pose hazards to worker contact.	(iv) industrial, including any water supplies used in association with a manufacturing or production enterprise other than food processing), including mining, placer mining, energy production or development
	Toxic substances narrative: same as I. (A) (i).	(B) water recreation (i) contact recreation.
	Toxic substances narrative: substances shall not be present which pose hazards to incidental human contact.	(ii) secondary recreation
	Toxic substances narrative: shall not individually or in combination exceed 0.01 times the lowest measured 96 hour LC_{50} for life stages of species identified by the department as being the most sensitive, biologically important to the location, or exceed criteria cited in EPA Quality Criteria for Water or Alaska Drinking Water Standards whichever concentration is less.	(C) growth and propagation of fish, shellfish, other aquatic life, and wildlife including waterfowl and furbearers
	Toxic substances narrative: same as I. (A) (iii).	II. Marine water (A) water supply (i) aquaculture
	Toxic substances narrative: shall not exceed EPA Quality Criteria for Water as applicable to the substance.	(ii) seafood processing
	Toxic substances narrative: same as I. (A) (iv).	(iii) industrial, including any water supplies used in association with a manufacturing or production enterprise (other than food processing) including mining, placer mining, energy production or development

State	Criteria values in mg/l	Designated Stream Use
Alaska (con't)	Toxic substances narrative: same as II. (A) (ii).	(B) water recreation
		(i) contact recreation
	Toxic substances narrative: same as I. (B) (ii).	(ii) secondary recreation
	Toxic substances narrative: same as I. (C).	(C) growth and propagation of fish, shellfish, aquatic life, and wildlife including seabirds, waterfowl and furbearers
	Toxic substances narrative:same as I. (C) but excluding the phrase "or Alaska Drinking Water Standards."	(D) harvesting for consumption of raw mollusks or other raw aquatic life
	Means those materials, or combinations of materials, including disease-causing agents which after discharge and upon exposure, ingestion, inhalation or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will, on the basis of information available, cause death, disease, behavioral abnormalities, malignancy, genetic mutation, physiological abnormalities (including malfunctions in reproduction) or physical deformations, in affected organisms or their offspring; the term includes the following substances, and any other substance identified as a toxic pollutant under sec. 307 (a) of the Clean Water Act of 1977 (33 U.S.C. sec. 466 et seq.); (See Definitions Digest)	
Arizona[3]	Not Specified	All
	Toxic substances narrative: Toxic substances shall be kept below levels which are deleterious to human, animal, plant or aquatic life, or in amounts sufficient to interfere with the beneficial use of the water. As a minimum evaluation for the presence of toxic substances, a water	All surface waters

State	Criteria values in mg/l	Designated Stream Use
Arizona (con't)	shall be evaluated by use of a 96-hour bioassay, guided by the document Standard Methods for the Examination of Water and Wastewater. The survival of the test organisms shall not be less than that in controls which utilize appropriate experimental water.	
Arkansas[4]	Not specified	All
	Toxic substances narrative: Toxic materials attributable to municipal, industrial, agricultural, or other waste discharges, shall not be present in receiving waters in such quanitities as to be toxic to human, animal, plant or aquatic life or to interfere with the normal propagation of aquatic life. For any toxicants, concentrations in the receiving waters after mixing shall not exceed 0.01 of the 96-hour TLm, unless they can be shown to be nonpersistant and noncumulative, and to exhibit no synergistic interactions with other waste or stream components. In no case shall concentrations exceed 0.05 of the 96-hour TLm.	All
California[A]	No individual pesticide or combination of pesticides shall be present in concentrations that adversely affect beneficial uses. There shall be no bioaccumulation in pesticide concentrations found in bottom sediments or aquatic life.	All
	Total identifiable chlorinated hydrocarbon pesticides shall not be present at concentrations detectable within the accuracy of analytical methods prescribed in Standard Methods for the Examination of Water and Wastewater, latest edition, or other equivalent methods approved by the Executive Officer.	
Colorado[5]	Chlorinated Pesticides:	
	0.000003 Aldrin (1)	Aquatic life
	0.000003 Dieldrin (1)	Aquatic life
	0.000001 DDT (DDD & DDE)	Aquatic life

State	Criteria values in mg/l	Designated Stream Use
Colorado (con't)	0.000004 Endrin 0.0002	Aquatic life Domestic water supply
	.000001 Heptachlor	Aquatic life
	0.00001 Lindane 0.004	Aquatic life Domestic Water supply
	0.00003 Methoxychlor 0.1	Aquatic life Domestic water supply
	0.000001 Mirex	Aquatic life
	0.000005 Toxaphene 0.005	Aquatic life Domestic water supply
	Orthophosphate Pesticides:	
	0.0001 Demeton	Aquatic life
	0.000003 Endosulfan	Aquatic life
	0.00001 Guthion	Aquatic life
	0.0001 Malathion	Aquatic life
	0.00004 Parathion	Aquatic life
	Chlorophenoxys (Herbidides):	
	0.1 2.4D	Domestic water supply
	Toxic substances narrative: Substances attributable to human-induced discharges not otherwise controlled by permits, BMP's, or plans of operation approved by the Division, shall not be introduced into the waters of the State..in amounts, concentrations, or combinations which are...toxic to humans, animals, plants, or aquatic life. (1) Aldrin and dieldrin in combination should not exceed 0.000003 mg/l.	All
Connecticut[6]	Not specified	All
	Toxic substances narrative: Note 4. The waters shall be free from chemical constituents in concentrations or combinations	All

State	Criteria values in mg/l	Designated Stream Use
Connecticut (con't)	which would be harmful to human, animal or aquatic life for the most sensitive and governing water use class. Criteria for chemical constituents contained in the - Quality Criteria for Water (EPA) shall be considered and used as guidance. In areas where fisheries are the governing considerations and approved limits have not been established, bioassays are necessary to establish limits on toxic substances, the recommendations for bioassay procedures contained in "Standard Methods for the Examination of Water and Wastewater" and the application factors contained, in Quality Criteria for Water (EPA) shall be considered. For public drinking water supplies, the raw water sources must be of such a quality that EPA limits as defined by the Safe Drinking Water Act (PL 93-523), or state limits if more stringent, for finished water can be met after conventional treatment.	
	Toxic substances narrative: None in concentrations or combinations which would be harmful to human, animal or aquatic life or which would make the waters unsafe or unsuitable for fish or shellfish or their propagation or impair the waters for any other uses.	Coastal and marine water uses
Delaware[B]	0.000001 DDT	Aquatic life
	0.000003 Aldrin	Aquatic life
	0.000005 Toxaphene 0.005	Aquatic life Drinking water supply
	0.000003 Dieldrin	Aquatic life
	0.0002 Endrin	Drinking water supply
Florida[7]	0.000003 Alldrin plus Dieldrin 0.000003 0.000003	Public water supply Shellfish Recreation; fish and wildlife

State	Criteria values in mg/l	Designated Stream Use
Florida (con't)	0.00001 Chlordane 0.000004 0.00001 In predominantly fresh waters and 0.000004 in predominanatly marine waters	Public water supply Shellfish Recreation, fish and wildlife
	0.1 2.4-D	Public water supply
	0.01 2,4,5 - TP	Public water supply
	0.000001 DDT 0.000001 0.000001	Public water supply Shellfish Recreation, fish and wildlife
	0.0001 Demeton 0.0001 0.0001	Public water supply Shellfish Recreation, fish and wildlife
	0.000003 Endosulfan 0.000001 0.000003 in predominantly fresh waters 0.000001 in predominantly marine waters	Public water supply Shellfish Recreation, fish and wildlife
	0.000004 Endrin 0.000004 0.000004	Public water supply Shellfish Recreation, fish and wildlife
	0.00001 Guthion 0.00001 0.00001	Public water supply Shellfish Recreation, fish and wildlife
	0.000001 Heptachlor 0.000001 0.000001	Public water supply Shellfish Recreation, fish and wildlife
	0.00001 Lindane 0.000004 0.00001 in predominantly fresh waters and 0.000004 in predominantly marine waters	Public water supply Shellfish Recreation fish, and wildlife
	0.0001 Malathion 0.0001 0.0001	Public water supply Shellfish Recreation, fish and wildlife

State	Criteria values in mg/l	Designated Stream Use
Florida (con't)	0.00003 Methoxychlor	Public water supply
	0.00003	Shellfish
	0.00003	Recreation, fish and wildlife
	0.000001 Mirex	Public water supply
	0.000001	Shellfish
	0.000001	Recreation, fish and wildlife
	0.00004 Parathion	Public water supply
	0.00004	Shellfish
	0.00004	Recreation, fish and wildlife
	0.000005 Toxaphene	Public water supply
	0.000005	Shellfish
	0.000005	Recreation, fish and wildlife
Georgia[8]	Not specified	All
	Toxic substances narrative: No material or substance in such concentration that, after treatment, would exceed the requirements of the Environmental Protection Division and the latest edition of the Federal Drinking Water Standards.	Drinking water supplies
	Toxic wastes narrative: None in concentrations that would harm man, fish and game or other beneficial aquatic life.	Recreation; fishing, propagation of fish, shellfish, game and other aquatic life
	Toxic substance narrative: None in concentrations that would prevent fish survival.	Agricultural: industrial; navigation
	Toxic substances narrative: Free from toxic substances discharged from municipalities, industries or other sources in amounts, concentrations or combinations which are harmful to humans, animals or aquatic life.	All
Hawaii[9]	Not specified	All
Idaho[10]	Not specified	All

State	Criteria values in mg/l	Designated Stream Use
Idaho (con't)	The following general water quality standards will apply to waters of the State, both surface and underground, in addition to the water quality standards set forth for specifically classified waters. Manual Sections 1-2200.04 --1-2200.06 will, however, apply only to surface waters. As a result of man-caused point or nonpoint source discharge, waters of the State must not contain: (1-30-80) .01 Hazardous Materials. Hazardous materials (see Manual Section 1-2003.17) in concentrations found to be of public health significance or to adversely affect designated or protected beneficial uses. (1-30-80) .02 Deleterious Materials: Deleterious materials (see Manual Section 1-2003.06) in concentrations that impair designated or protected beneficial uses without being hazardous. (1-30-80)	
Illinois[11]	Waters shall meet the following standard at any point at which water is withdrawn: water shall be of such quality that with treatment consisting of coagulation, sedimantation, filtration, storage and chlorination, or other equivalent treatment processes, the treated water shall meet in all respects: Chlorinated Hydrocarbon Insecticides: 0.001 Aldrin 0.003 Chlordane 0.05 DDT 0.001 Dieldrin 0.0002 Endrin 0.0001 Heptachlor 0.0001 Heptachlor Epoxide	Public and food processing water supply

State	Criteria values in mg/l	Designated Stream Use
Illinois (con't)	0.004 Lindane	
	0.1 Metoxychlor	
	0.005 Toxaphene	
	Organophosphate Insecticides:	
	0.1 Parathion	
	Chlorophenoxy Herbicides:	
	0.1 - 2,4-Dichlorophenoxy-acetic acid (2,4,D)	
	0.01 - 2-(2,4,5-Trichiorophenoxy) propionic acid (2,4,5-TP or Silvex)	
	Toxic substances narrative: Freedom from matter in concentrations or combinations toxic to human, animal, plant or aquatic life of other than natural origin. Any substances toxic to aquatic life shall not exceed 0.1 of the 96-hour TLm for native fish or essential fish food organisms.	All
	Any substance toxic to aquatic life shall not exceed 1/10th of the 96-hour median tolerance limit (96-hr TL_m) for native fish or essential fish food organisms except for USEPA registered pesticides approved for aquatic application and applied pursuant to the following conditions:	
	(i) Applications shall be made in strict accordance with label directions.	
	(ii) Applicator shall be properly certified under the provisions of the Federal Insecticide Fungicide, and Rodenticide Act, 7 U.S.C. 135 et seq. (1972)	
	(iii) Application of aquatic pesticides must be in accordance with the laws, regulations and guidelines of all State and Federal agencies authorized by law to regulate, use, or supervise pesticide applications, among which are included	

State	Criteria values in mg/l	Designated Stream Use
Illinois (con't)	the Illinois Department of Conservation pursuant to Ill. Rev. Stat. Ch. 56, Secs. 1.1-250 (1976); the Illinois Department of Agriculture and the Illinois Department of Public Health pursuant to Ill. Rev. Stat., Ch.5, Secs. 256-257 (1976); and the Illinois Natural History Survey pursuant to Ill. Rev. Stat., Ch. 127, Sec. 58-14 (1976).	
	(iv) No aquatic pesticide shall be applied to water affecting public or food processing water supplies unless a permit to apply the pesticide has been obtained from the Illinois Environmental Protection Agency. All permits shall be issued so as not to cause a violation of the Act or of any of the Board's rules or regulations. To aid applicators in determining their responsibilities under this subsection, a list of waters affecting public water supplies will be published and maintained by the Agency's Division of Public Water Supplies.	
Indiana[12]	Not Specified	All
	Toxic substances narrative: free from sub stances attributable to municipal, industrial, agricultural, and other land use practices or other discharges which are in amounts sufficient to be toxic to humans, animals, aquatic life or plants. As a guideline, toxic substances should be limited to the 96-hour median lethal concentration (LC50) for biota significant to the indigenous aquatic community.	All
	Toxic substances narrative: shall not exceed 0.1 of the 96-hour median lethal concentration for important indigenous aquatic species. More stringent application factors shall be used when justified. Concentrations of organic contaminants which can be demonstrated to be persistent, to have a tendency to bioconcentrate in the aquatic biota, and are likely to be toxic on the basis of available scientific evidence, shall be limited as determined by the Board.	Aquatic life; fish

State	Criteria values in mg/l	Designated Stream Use
Indiana (con't)	Toxic substances narrative: shall not be present after conventional treatment in such levels as to prevent meeting the Drinking Water Standards adopted by the Indiana State Board of Health or by the Indiana Environmental Management Board.	Potable supply
	Toxic Substance Narrative: Concentrations of toxic substances shall not exceed one-tenth of the 96-hour median lethal concentration for important indigenous aquatic species. More stringent application factors shall be used when justified on the basis of available evidence and approved by the Board after public notice and opportunity for hearings.	
	Persistent or Bioconcentrating Substances: Concentrations of organic contaminants which can be demonstrated to be persistent, to have a tendency to bioconcentrate in the aquatic biota, and are likely to be toxic on the basis of available scientific evidence, shall be limited as determined by the Board after public notice and opportunity for hearing. (Note: For subsections 6 (b)(2) and 6 (b)(3), The United States Environmental Protection Agency Administrators' Quality Criteria for Water will be among the documents used in establishing water quality standards for toxic and/or persistent substances)	
Iowa[13]	Toxic substances narrative: All waters, at all times, at all places shall be free from substances attributable to wastewater discharges or agricultural practices in concentrations or combinations which are toxic or harmful to human, animal, or plant life.	All
	Toxic substances narrative: all substances toxic or detrimental to aquatic life shall be limited to non-toxic or non-detrimental concentrations in surface waters.	Wildlife, fish, aquatic and semiaquatic life and secondary contact

State	Criteria values in mg/l	Designated Stream Use
Iowa (con't)	Toxic substances narrative: all substances toxic to humans shall be limited to non-toxic concentrations.	Potable water supply
Kansas[14]	Not specified	All
	General criteria: the individual and cumulative effect of waste discharges to waters shall be guided by both the primary and secondary drinking water regulations (40 CFR 141) and EPA criteria for water quality. Pollutional substances contributed by man-made sources shall be controlled so that all waters are free from public health hazards or nuisance conditions at all times.	All
	Toxic substances narrative: Toxic substances or toxic synergistic effects of substances from man-made sources shall be limited to concentrations in the receiving water that will not be harmful to animal, plant or aquatic life.	All
Kentucky[15]	Surface waters shall not be aesthetically or otherwise degraded by substances that injure, be toxic to or produce adverse physiological or behavioral responses in humans, fish, shellfish, and aquatic life.	All
	The allowable instream concentration of toxic substances, including pesticides, shall not exceed 0.01 of the 96-hour median lethal concentration (LC_{50}) or 0.1 of the 96-hour LC_{50} for noncumulative and nonpersistent toxic materials using a representative indigenous aquatic organism.	Warmwater aquatic habitat
Louisiana[16]	Not specified	All
	Toxic substances narrative: free from such concentrations of substances attributable to waste water or other discharges sufficient to injure or are toxic or produce adverse physiological response in humans, animals, fish, shellfish, wildlife, or plants.	All

State	Criteria values in mg/l	Designated Stream Use
Louisiana (con't)	Shall not be present in quantities that alone or in combination will be toxic to animal or plant life. In all cases the level shall not exceed the TLm 96/10. Bioassay techniques will be used in evaluating toxicity utilizing methods and species of test organisms suitable to the purpose at hand.	
	Toxic substances shall not exceed the levels established by the USPHS drinking water standards latest edition.	Public water supply
Maine[17]	Not Specified	All
	Toxic substances narrative: no waste substances containing chemical constituents which would be harmful to humans, animal or aquatic life.	All
Maryland[18]	Not specified	All
	Toxic substances narrative: at all times free from toxic substances attributable to sewage, industrial waste, or other waste in concentrations or combinations which are harmful to human, animal, plant or aquatic life.	All
Massachusetts[19]	Not specified	All
	Toxic substances narrative: free from pollutants in concentrations or combinations that are toxic to humans or aquatic life.	All
	For each class, the most sensitive beneficial uses are identified and minimum criteria for water quality in the water column are established. The minimum criteria in Reg. 3.4 have been developed by applying the criteria contained in the EPA publication Quality Criteria for Water (EPA-440/9-76-023) to account for local conditions including, but not limited to:	
	(a) The characteristics of the biological community	

State	Criteria values in mg/l	Designated Stream Use
Massachusetts (con't)	(b) Temperature, weather and flow characteristics, and (c) Synergistic and antagonistic effects of combinations of pollutants. The Division will use the EPA publication entitled Quality Criteria for Water, EPA-440/9-76-023 as guidance in establishing case-by-case discharge limits for pollutants not specifically listed in these standards but included under the heading "Other Constituents" in Regulation 3.4, for identifying bioassay application factors and for interpretations of narrative criteria. Where the minimum criteria specifically listed by a Division in this part differ from those contained in the federal criteria, the provisions of the specifically listed criteria in these standards shall apply.	
Michigan[20]	Not Specified.	All
	Toxic substances narrative: (1) toxicity of undefined toxic substances not included in (2) and (3) below shall be determined by development of 96-hour TLm's or other appropriate effect end points obtained by continuous-flow or in situ bioassays using suitable test organisms. Shall not exceed safe concentrations as determined by applying an application factor, based on knowledge of behavior of toxic substances and organisms to be protected, to the TLm or other appropriate effect end point.	All
	(2) defined toxic substances shall be limited by application of recommendations contained in the chapter on Freshwater Organisms, Report of the NTAC to Secretary of the Interior, WQC, 1968, or by application of any toxic effluent standard, limitation or prohibition promulgated by EPA pursuant to section 307(a) of PL92-500, whichever is more restrictive.	All

State	Criteria values in mg/l	Designated Stream Use
Michigan (con't)	(3) shall not exceed the permissible inorganic chemicals criteria for raw public water supply in Report of the NTAC to Secretary of the Interior, WQC, 1968.	Public water supply
Minnesota[21]	Not specified	All
	96-hour TLm for indigenous fish and fish food organisms should not be exceeded at any point in the mixing zone.	All
	Toxic substances narrative: none at levels acutely toxic to humans or other animals or plant life.	All
	Toxic substances narrative: none at levels harmful either directly or indirectly.	Agriculture and wildlife (Class B)
	Questions concerning the permissible levels, or changes in the same, of a substance, or combination of substances, of undefined toxicity to fish or other Biota shall be resolved in accordance with the latest methods recommended by the U. S. Environmental Protection Agency. The recommendations of the National Technical Advisory Committee appointed by the U. S. Environmental Protection Agency shall be used as official guidelines in all aspects where the recommendations may be applicable. Toxic substances shall not exceed 1/10 of the 96-hour median tolerance limit (TLM) as a water quality standard except that other more stringent application factors shall be used when justified on the basis of available evidence.	
Mississippi[22]	Not specified	All
	Toxic substances narrative: free from substances attributable to municipal, industrial, agricultural or other discharges in concentrations or combinations which are toxic to humans, animal or other aquatic life.	All

State	Criteria values in mg/l	Designated Stream Use
Mississippi (con't)	Toxic substances narrative: the concentration of toxic pollutants shall not exceed 0.1 of the 96-hour TLm based on available data.	Shellfish Harvesting Recreation, fish and wildlife.
Missouri[D]	0.0001 Demeton	Aquatic life
	0.000003 Endosulfan	Aquatic life
	0.00001 Guthion	Aquatic life
	0.0001 Malathion	Aquatic life
	0.00004 Parathion	Aquatic life
	0 DDT	All
	0 Endrin	All
	0 Aldrin	All
	0 Dieldrin	All
	0 Heptachlor	All
	0 Methoxychlor	All
	0 Mirex	All
	0 Toxaphene	All
	0 Lindane	All
	0 Chloradane	All
	0 Benzidine	All
	0.1 2,4-D	Drinking water supply
	0.01 2,4,5-TP	Drinking water supply
Montana [23]	Not specified	All
	Toxic substances narrative: free from substances attributable to municipal, industrial, agricultural practices or other discharges that will create concentrations	All

State	Criteria values in mg/l	Designated Stream Use
Montana (con't)	or combinations of materials which are toxic to human, animal, plant or aquatic life.	
	Toxic substances narrative: no increases above naturally occuring concentrations are allowed.	Water supply (Class A-Closed)
	Toxic substances narrative: concentrations of toxic substances after treatment for domestic use are not to exceed recommended limits in latest EPA drinking water standards; maximum allowable concentrations are to be less than acute or chronic problem levels as revealed by bioassay or other methods.	Water supply (classes A-Open-D_1, B-D_1, B-D_2, B-D_3)
	Concentrations of toxic or other deleterious substances, pesticides and organic and inorganic materials including heavy metals, are not to exceed levels known or demonstrated to be of public health significance; also maximum allowable concentrations are to be less than acute or chronic problem levels as revealed by bioassay or other methods.	Fish, aquatic life, wildlife, agriculture, industrial, recreation in and on the water (classes C-D_1, C-D_2)
	Toxic substances narrative: Concentrations of toxic or deleterious substances, pesticides and organic and inorganic materials including heavy metals, are to be less than those demonstrated to be deleterious to livestock or plants or their subsequent consumption by humans or to adversely affect other indicated uses.	Agricultural and industrial (other than food processing)
	Application of pesticides in or adjacent to state waters is to be in compliance with the labeled directions, and in accordance with provisions of the Montana Pesticides Act (Title 27, Chapter 2 R.C.M. 1947) and the Federal Environmental Pesticides Control Act (Public Law 92-516). Excess pesticide containers are not to be disposed of in a manner or in a location where they are likely to pollute state waters.	

State	Criteria values in mg/l		Designated Stream Use
Nebraska[24]	Not specified		All
	Toxic substances narrative: none alone or in combination with other substances or wastes in concentrations rendering the receiving water unsafe or unsuitable for the assigned beneficial uses.		All
Nevada[25]	Aldrin-dieldrin	0.001	Domestic water supply, livestock
		0.000003	Aquatic life, wildlife
	Chlordane	0.003	Domestic water supply, livestock
		0.00001	Aquatic life, wildlife
	DDT	0.05	Domestic water supply, livestock
		0.000001	Aquatic life, wildlife
	Demeton	Less than detectable*	Domestic water supply, livestock
		0.0001	Aquatic life, wildlife
	Endosulfan	Less than detectable*	Domestic water supply, livestock
		0.000003	Aquatic life, wildlife
	Endrin	0.0002	Domestic water supply, livestock
		.0000004	Aquatic life, wildlife
	Guthion	Less than detectable*	Domestic water supply, livestock
		0.00001	Aquatic life, wildlife
	Heptachlor	0.0001	Domestic water supply, livestock
		0.000001	Aquatic life, wildlife
	Lindane	0.004	Domestic water supply, livestock
		0.00001	Aquatic life, wildlife
	Malathion	Less than detectable*	Domestic water supply, livestock
		0.0001	Aquatic life, wildlife

State	Criteria values in mg/l		Designated Stream Use
Nevada (con't)	Metholxychlor	0.1	Domestic water supply, livestock
		0.00003	Aquatic life, wildlife
	Mirex	Less than detectable*	Domestic water supply, livestock
		0.000001	Aquatic life, wildlife
	Parathion	Less than detectable*	Domestic water supply, livestock
		0.00004	Aquatic life, wildlife
	Toxaphene	0.005	Domestic water supply, livestock
		0.000005	Aquatic life, wildlife
	(Also see Article 4.2.5., Nevada Water Pollution Control Regs., for numerical water quality standards for selected waters of the State)		
	* Less than methods found at 40 CFR 141.24		
New Hampshire[26]	Not specified		All
	Toxic substances narrative: none unless naturally occurring		Water supply (after disinfection)
	Toxic substances narrative: Not in toxic concentrations of combinations		Water supply (after adequate treatment), recreation, fish habitat, swimming, industrial
New Jersey[27]	The concentration of a persistent pesticide in surface waters shall not exceed one one-hundredth of the TL 50 value at 96 hours, as determined by appropriate bioassay. Persistent pesticides are defined as natural and synthetic materials having a half-life of greater than 96 hours, which are used to control unwanted or noxious animals or plants. They include fungicides, herbicides, insecticides, fumigants and rodenticides.		All
New Mexico[28]	Not specified		All
	Toxic substances narrative: shall not be present in concentrations which will		Recreation; desirable aquatic life

State	Criteria values in mg/l	Designated Stream Use
New Mexico (con't)	change the ecology of receiving waters to an extent detrimental to man or other organisms of direct or indirect commercial, recreational or esthetic value. Toxicities of substances in receiving waters will be determined by appropriate bioassay techniques, or other acceptable means, for the particular form of aquatic life which is to be preserved with the concentrations of toxic materials not to exceed 5 percent of the 96-hour LC50 provided that: toxic substances which, through uptake in the aquatic food chain and/or storage in plant and animal tissues, can be magnified to levels which are toxic to man or other organisms, shall not be present in concentrations which result in this biological magnification.	
	Toxic substances narrative: shall be protected from hazardous substances in concentrations that exceed drinking water standards established by the New Mexico Regulations governing water supplies.	Domestic water supplies
New York[29]	Not specified	All
	Toxic substances narrative: none in amounts that will be injurious to fish life or shellfish, or that would impair any designated uses of the water.	All
North Carolina[30]	0.000003 Aldrin	All
	0.00001 Chlordane	All
	0.000001 DDT	All
	0.0001 Demeton	All
	0.000003 Dieldrin	All
	0.000003 Endosulfan	All
	0.00003 Endrin	All
	.00001 Guthion	All
	0.000001 Heptachlor	All

State	Criteria values in mg/l	Designated Stream Use
North Carolina (con't)	0.00001 Lindane	All
	0.00003 Methoxychlor	All
	0.000001 Mirex	All
	0.00004 Parathion	All
	0.000005 Toxaphene	All
	0.10 2,4-D	Drinking water supply
	0.01 2,4,5-TP	Drinking water supply
North Dakota[31]	Not specified	All
	Toxic substances narrative: free from substances attributable to municipal, industrial, or other discharges or agricultural practices in concentrations or combinations which are toxic or harmful to human, animal, plant or resident aquatic life.	All
	Mixing zones narrative: the 96-hour TLm for indigenous and/or resident fish and fish food organisms shall not be exceeded at any point in the mixing zone.	All
Ohio[32]	0.001 Aldrin* 0.00001	Public water supply Warmwater habitat
	0.0001 Benzene Hexachloride	Warmwater habitat
	0.003 Chlordane 0.00001	Public water supply Warmwater habitat
	0.1 2,4-D	Public water supply
	0.01 2,4,5-TP (Silvex)	Public water supply
	0.0001 Ciodrin	Warmwater habitat
	0.000001 Coumaphos	Warmwater habitat
	0.11 Dalapon	Warmwater habitat
	0.05 DDT* 0.000001	Public water supply Warmwater habitat

State	Criteria values in mg/l	Designated Stream Use
Ohio (con't)	0.0001 Demeton	Warmwater habitat
	0.000009 Diazinon	Warmwater habitat
	0.2 Dicamba	Warmwater habitat
	0.000001 Dichlorvos	Warmwater habitat
	0.001 Dieldrin*	Public water supply
	0.000005	Warmwater habitat
	0.0005 Diquat	Warmwater habitat
	0.000001 Dursban	Warmwater habitat
	0.000003 Endosulfan	Warmwater habitat
	0.0002 Endrin	Public water supply
	0.000002	Warmwater habitat
	0.000005 Guthion	Warmwater habitat
	0.0001 Heptachlor*	Public water supply
	0.000001	Warmwater habitat
	0.0001 Heptachlor Epoxide	Public water supply
	0.004 Lindane	Public water supply
	0.00001	Warmwater habitat
	0.0001 Malathion	Warmwater habitat
	0.1 Methoxychlor	Public water supply
	0.000005	Warmwater habitat
	0.000001 Mirex	Warmwater habitat
	0.000004 Naled	Warmwater habitat
	0.000008 Parathion	Warmwater habitat
	0.00003 Phosphamidon	Warmwater habitat
	0.01 Simazine	Warmwater habitat
	0.0004 TEPP	Warmwater habitat
	0.005 Toxaphene	Public water supply
	0.000005	Warmwater habitat

*Banned

State	Criteria values in mg/l	Designated Stream Use
Oklahoma[33]	Not specified	All
	Toxic substances narrative: waters will not be toxic to humans, fish and wildlife, and other terrestrial and aquatic life, nor detrimental to any beneficial use including continued ingestion by livestock or use for irrigation. Toxic substances shall not be present in quantities which allow significant bioaccumulation and/or biomagnification in the food chain.	All
	Toxic substances narrative: toxic substances not removable by ordinary water treatment techniques shall not exceed the limits in Section 4.1 of the Oklahoma Water Quality Standards.	Public and private water supplies
	Toxic substances narrative: concentrations of nonpersistent toxic substances shall not exceed 0.1 of the 96-hour LC50 for the most sensitive indigenous species. Concentrations of persistent toxicants shall not exceed 0.05 of the 96-hour LC50, for the most sensitive indigenous species. Bioassay data for Pinephales promelas (Fathead minnow) and/or Lepomis macrochirus (Bluegill) shall be used in determining compliance.	Aquatic life
	Mixing zones narrative: shall not exceed the 96-hour LC50 for the most sensitive indigenous species.	All
	In the waters of the state the concentration of aldrin/dieldrin, endrin, benzidine, and toxaphene shall not exceed 1 microgram per liter, and DDT shall not exceed 0.2 micrograms per liter. With specific reference to those waters designated as Public and Private Water Supplies, the concentration of 2,4-D shall not exceed 0.1 milligram per liter and 2,4,5,-T shall not exceed 0.5 milligram per liter. The application of 2,4,5-T for currently approved uses (rangeland and rice), in the proper manner at the	

State	Criteria values in mg/l	Designated Stream Use
Oklahoma (con't)	approved application rate may result in instream concentrations in exceed of 0.05 mg/l. Therefore, temporary excursions not to exceed 0.1 mg/l will be allowed in the event unforeseen rainfall events occur within 24 hours after application. The decrease in diversity of benthic macroinvertebrates between an upstream and downstream station shall not exceed one (1), unless caused by natural conditions or phenomena. The determination of this parameter shall be made in conjunction with the Similarity Index. The equation used for determining species diversity ($\bar{d}$) is expressed: $\bar{d}=\sum_{i=1}^{s}(n_i/n)\log_2(n_i/n)$ Where (s) equals the total number of taxa in the sample; (n_1) equals the number of individuals per taxon; and (n) equals the total number of individuals of all taxa. For point sources, a minimum set of six (6) samples must be collected above the discharge point and six (6) samples at the end of the mixing zone. Each set of six (6) samples shall be pooled and the resulting diversities shall be used in determining compliance. Samples should be collected from a variety of substrate types if available, but similar substrates must be sampled above and below the discharge. Values of diversity shall not be based on less than one hundred (100) individuals. Benthos shall be collected with a Surber sampler, Ekman dredge, or comparable sampler. In streams where grab samples do not accurately reflect the benthic assemblage, the artificial substrate sampler shall be used. Artificial substrate samplers shall be of the Hester-Dendy or basket type. A minimum	

State	Criteria values in mg/l	Designated Stream Use
Oklahoma (con't)	instream duration of six (6) weeks shall be allowed for colonization of artificial substrate samplers. Where multiple discharges are in close proximity on the stream segment and overlapping of mixing zones occurs, diversity values may be used only in support of other data collected to determine comliance with these standards. The pH values shall be between 6.5 and 8.5 for Oklahoma's water; pH values less than 6.5 or greater than 8.5 must not be due to waste discharge(s). The control measures for other substances not heretofore mentioned will be based on applicable Federal and State statutes, rules and regulations and accumulated scientific data on limits above which injury from use occurs. Such control measures when adopted pursuant to 75 O.S. 1971, §301 et seq. will become a part of these standards.	
Oregon[34]	Not specifed	All
	No wastes shall be discharged and no activities shall be conducted which either alone or in combination with other wastes or activities will cause toxic conditions that are deleterious to fish or other aquatic life or affect the potablity of drinking water. Toxic Substances shall not exceed those criteria contained in the 1976 and subsequent edition(s) of the EPA Publication, "Quality Criteria for Water." These standards shall apply unless supporting data show conclusively that beneficial uses will not be adversely affected by exceeding the standards by a specific amount or that a more stringent standard is warranted to protect beneficial uses.	All

State	Criteria values in mg/l	Designated Stream Use
Pennsylvania[35]	Note specified	All
	Toxic substances narrative: shall not be inimical or injurious to the designated water use.	All
Rhode Island[36]	None in concentrations or combinations which would be harmful to human, animal or aquatic life or which would make the waters unsafe or unsuitable for fish or shellfish or their propagation, impair the palatability of same, or impair the waters for any other uses.	Class SA/SA_m
	None in concentrations on combinations which would be harmful to human, animal or aquatic life or which would make the waters unsafe or unsuitable for fish of shellfish or their propagation, or impair the water for any other usage assigned to this Class.	Class SB
	None in concentrations or combinations which would be harmful to human, animal or aquatic life or which would make the waters unsafe or unsuitable for fish or shellfish or their propagation, or impair the water for any other usage assigned to this Class.	Class SC
	Waters shall be free from chemical constitutents in concentrations or combinations which would be harmful to human, animal, or aquatic life for the appropriate most sensitive and governing water class use or unfavorably alter the biota.	Class A, B, C, and D
	In areas where fisheries are the governing considerations and approved limits have not been established, bioassays shall be performed as required by the appropriate agencies. The latest edition of the federal publication Water Quality Criteria will be considered the interpretation and application of bioassay result. Bioassays shall be performed according to the latest edition of Standard Methods for the Examination of Water and Wastewater (APHA).	

State	Criteria values in mg/l	Designated Stream Use
Rhode Island (con't)	For public drinking water supplies, the limit prescribed by the United States Environmental Protection Agency will be used where not superseded by more stringent state requirements.	
South Carolina[37]	Not specified	All
	Toxic substances narrative: none (zero).	Domestic and food processing; trout fishing; outstanding recreational or ecological resources
	Toxic substances narrative: none in amounts exceeding limitations established and adopted by the Department of Health and Environmental Control.	Direct water contact (swimming); domestic supply; propagation of fish; industrial; agricultural
	Toxic substances narrative: none alone or in combination with other substances or wastes in sufficient amounts to be injurious to edible fish or shellfish or the culture or propagation thereof.	Shellfish harvesting; direct water contact (swimming); crabbing; commercial fishing; propagation of marine fauna and flora
	Toxic substances narrative: shall be free from toxic substances attributable to sewage, industrial waste, or other waste in concentrations or combinations which are harmful to human, animal, plant or aquatic life.	All
South Dakota[38]	Not specified	All
	Concentrations of chemicals toxic to humans, animals, plants, or the most sensitive stage or form of aquatic life, greater than 0.1 times the median tolerance limit for short residual compounds or 0.01 times the median tolerance limit for an accumulative substance or substances exhibiting a residual life exceeding thirty days in the receiving waters. Median tolerance limits shall be determined in accordance with section 34:04:02:06. Concentrations specified for toxic materials shall be based on daily averages, but the concentrations shall not exceed one hundred and twenty-five per cent of the value specified in this section at any time or at any point in the receiving water.	All

State	Criteria values in mg/l	Designated Stream Use
Tennessee[39]	The instream concentrations of toxic pollutants shall not exceed 1/10 of the 96-hour LC50 based upon available data using one or more of the most sensitive organisms significant to aquatic community of the waters under consideration. Cumulative substance may be further limited on a case-by-case basis.	Aquatic life
	Toxic substances narrative: No toxic substances added that will produce toxic conditions that materially affect man or animals; impair the safety of a conventionally treated water supply; affect the water for industrial processing, fish or aquatic life, man or animal, livestock and wildlife, navigation, irrigation.	All
Texas[40]	Not specified	All
	Toxic substances narrative: the surface waters of the State shall be maintained so that they will not be toxic to man, fish and wildlife, and any other terrestrial and aquatic life.	All
	Toxic substances narrative: toxic materials not removable by ordinary water treatment techniques shall not exceed USPHS Drinking Water Standards or those established by EPA pursuant to the Safe Drinking Water Act. For a general guide, with respect to fish toxicity, receiving waters outside mixing zones should not have a concentration of nonpersistent toxic materials exceeding 0.1 of the 96-hour TLm, where the bioassay is made using fish indigenous to the receiving waters. For persistent toxicants, concentrations should not exceed 0.05 of the 96-hour TLm.	Public drinking water supplies
Utah[41]	0.0002 Endrin 0.000004	Domestic water supply Aquatic life
	0.004 Lindane 0.00001	Domestic water supply Aquatic life
	0.1 Methoxychlor 0.00003	Domestic water supply Aquatic life

State	Criteria values in mg/l	Designated Stream Use
Utah (con't)	0.005 Toxaphene 0.000005	Domestic water supply Aquatic life
	0.1 2,4-D	Domestic water supply
	0.01 2,4,5-TP	Domestic water supply
Vermont[42]	Not specified	All
	Wastes discharged to waters of the State shall contain no chemical or radiological constituents which would be inconsistent with the water uses associated with the assigned water class.	
	Discharge of radioactive material to waters of the State shall not exceed the lowest practicable limits after utilization of the latest technological development and equipment for control of radioactive emissions. In no event shall the discharge of such materials exceed the limits established by the Agency of Human Services.	
	There shall be no discharge of wastes containing any of the prohibited substances set forth below in detectable amounts either to waters of the State or to a municipal wastewater collection and /or treatment facility except in those cases where a process water contains an incoming level of a prohibited substance due to natural or other causes. In such cases the concentration of the prohibited substance or substances in the actual wastes discharged shall not be increased.	
	2,4,5-T - Prohibited	
	Aldrin - Prohibited hexachlorohexahydro-endo exo-dimethanonaphalene	
	DDT - Prohibited Dichlorodiphenyl trichloroethane 2,4,5 - trichlorophenoxyacetic acid	

State	Criteria values in mg/l	Designated Stream Use
Vermont (con't)	Dieldrin - Prohibited hexachloxoepoxyoctahydro-endo exodimethanonaphalene	
	Diquat - Prohibited diquat dibromide 6,7 - dihydrodipyrido dibromide Pyrayidinuim	
	Endrin - Prohibited hexachloroepoxyoctahydro-endo endodimethanonaphalene	
	The Secretary shall determine in accordance with the provisions of Section 1259 of Title 10 V.S.A. the appropriate limits for discharges containing chemical and other substances when such limits are not otherwise specified by these regulations. In establishing such effluent limitations, the Secretary shall use the current edition of the United States Environmental Protection Agency publication Quality Criteria for Water as a guideline and reference and shall give consideration to concentrations of prohibited substances and other constituents in the receiving waters and to any synergistic relationship which may exist between the various substances being discharged and those existing in the receiving waters.	
Virginia[43]	0.017 Aldrin	Public or municipal water supplies
	0.003 Chlordane	
	0.042 DDT	
	0.017 Dieldrin	
	0.0002 Endrin	Public Water Supplies
	0.018 Heptachlor	
	0.018 Heptchlor epoxide	
	0.004 Lindane	Public Water Supplies
	0.1 Methoxychlor	Public Water Supplies

State	Criteria values in mg/l	Designated Stream Use
Virginia (con't)	0.1 Organic phosphates plus Carbamates	
	0.005 Toxaphene	Public water supplies
	0.1 2,4-D plus 2,4,5-T plus 2, 4,5-TP	
	0.003 ug/l Aldrin/Dieldrin	All waters
	0.004 ug/l Chlordane 0.01 ug/l	Class I and II Class III, IV, V, & VI
	0.001 ug/l DDT	All waters
	0.1 ug/l Demeton	All waters
	0.001 ug/l Endosulfan 0.003 ug/l	Class I & II Class III, IV, V, & VI
	0.004 ug/l Endrin	All waters
	0.01 ug/l Guthion	All waters
	0.001 ug/l Heptachlor	All waters
	0.004 ug/l Lindane 0.01 ug/l	Class I & II Class III, IV, V, & VI
	0.1 ug/l Malathion	All waters
	0.03 ug/l Methoxychlor	All waters
	0.04 ug/l Parathion	All waters
	None - Toxaphene	
	None - Mirex	
Washington[44]	Not Specified	All
	Toxic substances narrative: toxic material concentrations shall be below those which adversely affect public health, and the natural aquatic environment.	All uses for extraordinary (class AA) and lake class waters
	Toxic substances narrative: toxic material concentrations shall be below those which adversely affect public health, or which may cause acute or chronic toxic conditions to the aquatic biota.	All uses for excellent (class A), good (class B), and fair (class C) waters

State	Criteria values in mg/l	Designated Stream Use
Washington (con't)	Deleterious concentrations of toxic, or other nonradioactive materials, shall be determined by the department in consideration of the "Quality Criteria for Water," published by EPA 1976, and as revised, as the authoritative source for criteria and/or other relevant information, if justified.	
West Virginia[45]	Not specified	All
	Toxic substances narrative: not to exceed 0.1 of the 96-hour TLm.	All
	No sewage, industrial wastes or other wastes present in any of the waters of the State shall have concentrations of materials poisonous to human, animal, or aquatic life.	All
Wisconsin[46]	Not specified	All
	Toxic substances narrative: substances in concentrations or combinations which are toxic or harmful to humans shall not be present in amounts found to be of public health significance, nor which are acutely harmful to animal, plant or aquatic life.	All
	Toxic substances narrative: the intake water supply will by appropriate treatment and adequate safeguards meet the PHS Drinking Water Standards, 1962.	Public water supply
	(d) Unauthorized concentrations of substances are not permitted that alone or in combination with other materials present are toxic to fish or other aquatic life. The determination of the toxicity of a substance shall be based upon the available scientific date base. References to be used in determining the toxicity of a substance shall include, but not be limited to: 1. "Quality Criteria for Water" EPA 440/9-76-003, United States Environmental Protection Agency, Washington, D. C. 1976, and	All

State	Criteria values in mg/l	Designated Stream Use
Wisconsin (con't)	2. "Water Quality Criteria 1972" EPA-R-73-003. National Academy of Sciences, National Academy of Engineering. United States Government Printing Office, Washington, D. C. 1974.	
	3. Questions concerning the permissible levels, or changes in the same, of a substance, or combination of substances, of undefined toxicity to fish and other biota shall be resolved in accordance with the methods specified in "Water Quality Criteria 1972." "Standard Methods for the Examination of Water and Wastewater" 14th Edition, 1975 (American Public Health Association, New York) or other methods approved by the Department of Natural Resources.	
Wyoming[47]	Not specified	All
	Toxic substances narrative: none in concentrations or combinations attributable to or influenced by the activities of man which would damage or impair the normal growth, function or reproduction of human, animal, plant or aquatic life. Maximum allowable concentrations shall be based on latest edition of Quality Criteria for Water by EPA and/or more generally accepted scientific information.	All
American Samoa[E]	Concentrations must conform to national guidelines as stated in the NTAC Report, Water Quality Criteria, or in subsequent national guideline publications.	All
District of Columbia[48]	.000003 mg/l Max. Aldrin	All waters
	0.00001 mg/l max. Chlordane	All waters
	0.00001 mg/l max Demeton	All waters
	0.000005 mg/l max Dieldrin	All waters
	0.000003 mg/l max. Endosulfan	All waters

State	Criteria values in mg/l	Designated Stream Use
District of Columbia (con't)	0.000004 mg/l max. Endrin	All waters
	0.00001 mg/l max. Guthion	All waters
	0.000001 mg/l max. Heptachlor	All waters
	0.00001 mg/l max. Lindane	All waters
	0.0001 mg/l max. Malathion	All waters
	0.00003 mg/l max. Methoxychlor	All waters
	0.000001 mg/l max. Mirex	All waters
	0.00004 mg/l max. Parathion	All waters
	0.00001 mg/l max. Toxaphene	All waters
	0.0002 mg/l max. Endrin	Domestic water supply
	0.0001 mg/l max. Heptachlor Epoxide	Domestic water supply
	0.004 mg/l max. Lindane	Domestic water supply
	0.1 mg/l Methoxychlor	Domestic water supply
	0.1 mg/l max. Organophosphorus	Domestic water supply
	0.005 mg/l max. Toxaphene	Domestic water supply
	Toxic substances narrative: The waters shall at all times be free from: toxic substances attributable to sewage, industrial waste, or other waste in concentrations or combinations which interfere directly or indirectly with water uses, or which are harmful to human, animal, plant or aquatic life.	
Guam[F]	Concentrations of pesticides shall not exceed one percent of the 24-hour LC50 value determined using the receiving water in question and the most sensitive species of aquatic organism affected.	All
	Where the concentration based on the LC50 data exceed the following maximum numerical limits, the numerical limits shall constitute the criteria:	

State	Criteria values in mg/l	Designated Stream Use
Guam (con't)	(a) Organochlorides:	
	0.1 ug/l Aldrin	
	.002 ug/l DDT	
	.006 ug/l TDE	
	.005 ug/l Dieldrin	
	.04 ug/l Chlordane	
	.003 ug/l Endosulfan	
	.002 ug/l Endrin	
	.01 ug/l Heptachlor	
	.02 ug/l Lindane	
	.005 ug/l Methoxychlor	
	.01 ug/l Toxaphene	
	The total concentration of all organochlorides shall not exceed .04 ug/l.	
	(b) Organophosphates:	
	.001 ug/l Azinphosmethyl	
	.1 ug/l Ciodrin	
	.001 ug/l Coumaphos	
	.002 ug/l Diazinon	
	.001 ug/l Dichlorovos	
	.08 ug/l Dioxathion	
	.05 ug/l Disulfonton	
	.001 ug/l Dursban	
	.02 ug/l Ethion	
	.06 ug/l EPN	
	.005 ug/l Fenthion	
	.008 ug/l Malathion	

State	Criteria values in mg/l	Designated Stream Use
Guam (con't)	.002 ug/l Mevinphos	
	.008 ug/l Naled	
	.3 ug/l Oxydemeton Methyl	
	.03 ug/l Phosphamidon	
	.0001 ug/l Parathion	
	.3 ug/l TEPP	
	.002 ug/l Trichlorophon	
	The total concentration of all organophosphates shall not exceed .3 ug/l	
	(c) Carbamates:	
	.02 ug/l Carbaryl .1 ug/l Zectran	
	The total concentration of carbamates shall not exceed .02 ug/l.	
	(d) Herbicides, fungicides, and defoliants:	
	300 ug/l Aminotriazole	
	110 ug/l Dalapon	
	200 ug/l Dicamba	
	37 ug/l Dichlobenil	
	.7 ug/l Dichlone	
	.5 ug/l Diquat	
	1.5 ug/l Diuron	
	4 ug/l 2,4-D (BEE)	
	2 ug/l 2,4,5-T	
	45 ug/l Fenac (sodium salt)	
	2.0 ug/l Silvex (BEE)	
	2.0 ug/l Silvex (PGBE)	

State	Criteria values in mg/l	Designated Stream Use
Guam (con't)	10 ug/l Silvex (potassium salt) The total concentration of all herbicides, fungicides and defoliants shall not exceed 300 ug/l. (e) Botanicals: .002 ug/l Allethrin .01 ug/l pyrethrum 10 ug/l rotenone The total concentration of all botanicals shall not exceed 10 ug/l. In addition to the above pesticide limits, the following pesticide criteria shall apply to all surface waters of the Territory, except 2c waters. 1. Polychlorinated biphenyl concentrations in any sample consisting of a homogenate of 25 or more whole fish of any species shall be no greater than 0.5 ug/kg of the wet weight. 2. DDT concentrations in any sample consisting of a homogenate of 25 or more fish of any species shall be no greater than 50 ug/kg of the wet weight. 3. The sum of the concentrations of aldrin, dieldrin, endrin, and heptaclor in any sample consisting of 25 or more whole fish of any species shall be no greater than 5 ug/kg of the wet weight. 4. The concentration of any chlorinated hydrocarbons, in any sample consisting of a homogenate of 25 or more whole fish of any species shall be no greater than 50 ug/kg of the wet weight. The setting of numerical limits for specific pesticides should in no way be construed as official approval or authori-	

State	Criteria values in mg/l	Designated Stream Use
Guam (con't)	zation for their use where such use in contrary to U.S. Environmental Protection Agency or other Federal regulations which now exist or may be enacted at some future time.	
Puerto Rico[49]	Organochloride pesticide residues in surface and coastal waters shall not exceed 1/100 of the TLm 96 hours of approved species. In no case shall these pesticides exceed the concentration listed. .000002 Aldrin-Dieldrin 0.000004 Chlordane 0.000001 DDT 0.000001 Endosulfan 0.000001 Endrin 0.000001 Heptachlor 0.000004 Lindane 0.00002 Methoxychlor 0.000001 Mirex 0.000005 Toxaphene 0.00007 Perthane	All
	Organophosphorus and non-persistent pesticides residues in surface and coastal waters shall not exceed 1/10 of the TLm 96-hours approved species. In no case shall the following pesticides exceed the concentration listed: 0.0001 Demeton 0.00001 Guthion 0.0001 Malathion 0.000004 Parathion 0.00001 Coumaphos 0.00004 Dursban 0.0004 Fenthion 0.0004 Naled 0.08 2,4,-D 0.01 2,4,5-TP (Silvex)	All
Trust Territories[G] of the Pacific Islands	None (zero)	Drinking water supply

State	Criteria values in mg/l	Designated Stream Use
Virgin Islands[H]	Not specified	All
	Toxic substances narrative: free of substances in concentrations or combinations which are toxic or which produce undesirable physiological responses in human, fish, and other animal life, and plants.	

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